

# Metal Industry Indicators

## Indicators of Domestic Primary Metals, Steel, Aluminum, and Copper Activity

March 1998

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**The growth rates of most of the metal industry leading indexes continued to slow in January and February. Only the copper leading index is signaling an actual decline in industry activity in the coming months. The metals price leading index increased in January, following three straight monthly declines. But the growth rate of inventories of U.S. nonferrous metal products is at its highest level in almost 16 years, pointing to an oversupply of metals and continued weakness for most metal prices in the near term.**

The **primary metals leading index** increased 0.2% in February to 127.0 from a revised 126.7 in January. Its 6-month smoothed growth rate, a compound annual rate that measures the near-term trend, slipped to 1.6% from a revised 1.8% in January. Only four of the index's eight components were available for the February index calculation, therefore the index should be considered preliminary. The leading index increased because of a significant gain in the S&P stock price index for diversified machinery and a modest increase in the Purchasing Managers' Index. But growth in the index was held down by a fall in average weekly hours worked in the primary metals industry, which dropped by the largest amount in 2 years between January and February. The workweek had been at a relatively high level of 45.3 hours from November through January. The index was also pulled down by the fifth straight drop in the growth rate of the Journal of Commerce Metals Price Index.

Although the growth rate of the primary metals leading index has slowed in recent months, it is still above +1.0%, the level that usually points to a near-term upward trend in industry activity. The leading index is suggesting that in the coming months overall domestic metals activity will most likely grow at a slower pace than it did in 1997.

The **steel leading index** moved down 0.3% in January to 106.8 from a revised 107.1 in December. The index's 6-month smoothed growth rate decreased to 3.0% from 4.2% in December. The largest negative contributors to the change in the index were deflated new orders for blast furnaces and steel mills and deflated shipments of appliances. The growth rate of the steel leading index points to modest growth in the domestic steel industry over the next few months.

An large increase in the January average workweek for aluminum sheet, plate, and foil workers helped to push the January **aluminum mill products leading index** up 1.1% to 148.7 from a revised 147.1 in December. The index's 6-month smoothed growth rate also moved higher to 5.5% from a revised 4.1% in December. The aluminum mill products leading index continues to signal moderate near-term growth in industry activity.

As for **primary and secondary aluminum**, its leading index increased 0.3% to 245.9 in January, from a revised 245.2 in December. But the index's 6-month smoothed growth rate decreased to 3.5% from a revised 4.0%. Deflated new orders for nonferrous and other primary metals was the largest positive contributor to the net increase in the leading index, while the ratio of shipments to inventories for motor vehicles and parts was the largest negative contributor. The primary and secondary aluminum leading index continues to point to increasing U.S. demand for aluminum. However, much of that demand will probably be satisfied by imports. (Tables and charts for the primary and secondary aluminum indexes are in a separate file.)

The **copper leading index** dropped 0.2% to 119.0 in January from a revised 119.2 in December. This is the fourth month in a row that the copper leading index has declined. Its 6-month smoothed growth rate dipped to -4.2% from a revised -4.0% in December. The ratio of shipments to inventories for electronic and other electrical equipment and the MII copper stock price index were the largest negative contributors to the net decline in the index. An increase in deflated new orders for nonferrous and other primary metals was the largest positive contributor.

For the past 3 months, the index's 6-month smoothed growth rate has been below -1.0%, which usually indicates a downward near-term trend. This raises the question whether the index is signaling a cyclical downturn in the U.S. copper industry. Since its recent high in September of last year, the leading index has fallen 3.6%. So far, this decline is less than the declines in the past five cyclical downturns in the leading index. During the downturn in 1994-95, the leading index declined 4.8%. That drop was followed by a slowdown in growth as reflected by the coincident index, but not an actual recession in copper activity. So far, the leading index seems to have anticipated a sharp drop in only one of the copper coincident indicators, industrial production, which has fallen almost 5% between October and January. The two indicators accounting for most of the decline in the leading index, copper stock prices and the LME copper price, have recovered slightly in February and March and may

have hit their low points. The copper leading index, as well as some announced mine shutdowns, suggest that U.S. copper activity may continue to decline in the coming months, but it is too early to detect a signal of a recession in the copper industry.

## Metals Price Leading Index Rebounds After Three Straight Monthly Declines

The metals price leading index increased 0.8% in January, recovering some of the ground that it lost since last September. The index's 6-month smoothed growth rate moved up to 0.4% from a revised -1.0% in December.

Three of the four index components increased in January, with the 6-month smoothed growth rate of deflated new orders for U.S. nonferrous metals making the largest positive contribution to the net increase in the leading index. The growth rates of building permits for new housing in the United States and the

deflated U.S. M2 money supply also increased. But the fourth index component, the growth rate of the OECD leading index, moved lower for the fifth consecutive month.

Another indicator of future metal prices, the growth rate of the deflated value of nonferrous metal products inventories held in the United States increased to 19.8% in January, its highest growth rate since the 1982 business cycle recession. This growth rate serves as an indicator of changes in the supply of nonferrous metal products in the United States.

Although the growth rate of the metals price leading index has recovered a bit, it is still below +1.0%, the range that normally signals a near-term upward trend in metal prices. The performance of the metals price leading index and the relatively high level of metal inventories, along with the continuing uncertainty about the outlook of the East Asian economies, point to little or no growth for most metal prices over the next few months.

**An explanation of the indexes and the 6-month smoothed growth rates appears on page 12.**

**Table 1.**  
**Leading Index of Metal Prices and Growth Rates of the Nonferrous Metals Price Index, Inventories of Nonferrous Metal Products, and Selected Metal Prices**

Six-Month Smoothed Growth Rates						
	Leading Index of Metal Prices (1967=100)	MII Nonferrous Metals Price Index	U.S. Nonferrous Metal Products Inventories (1982\$)	Primary Aluminum	Primary Copper	Steel Scrap
<b>1997</b>						
January	96.0	6.4	-0.2	9.8	6.6	-6.6
February	96.6r	11.0	-0.9	12.7	10.5	3.7
March	96.8	10.4	-3.7	10.1	11.2	-3.3
April	96.5	9.7	-3.7	10.8	12.2	-8.5
May	96.4r	18.4	-5.1	11.0	30.7	2.0
June	96.5r	15.2	-3.3	5.1	25.8	3.4
July	97.3r	16.4	2.6	21.0	3.4	11.6
August	98.1r	5.1	3.1	4.6	-12.5	13.6
September	98.7r	1.4	3.4r	9.3	-15.9	4.6
October	97.5r	-8.6	6.2	3.6	-25.3	6.7
November	96.8r	-17.0	11.6	-1.9	-35.9	13.8
December	96.4r	-21.7	16.8r	-7.9	-41.3	10.8
<b>1998</b>						
January	97.2	-22.2	19.8	-10.4	-38.8	7.6
February	NA	-26.0	NA	-16.5	-38.9	-1.7

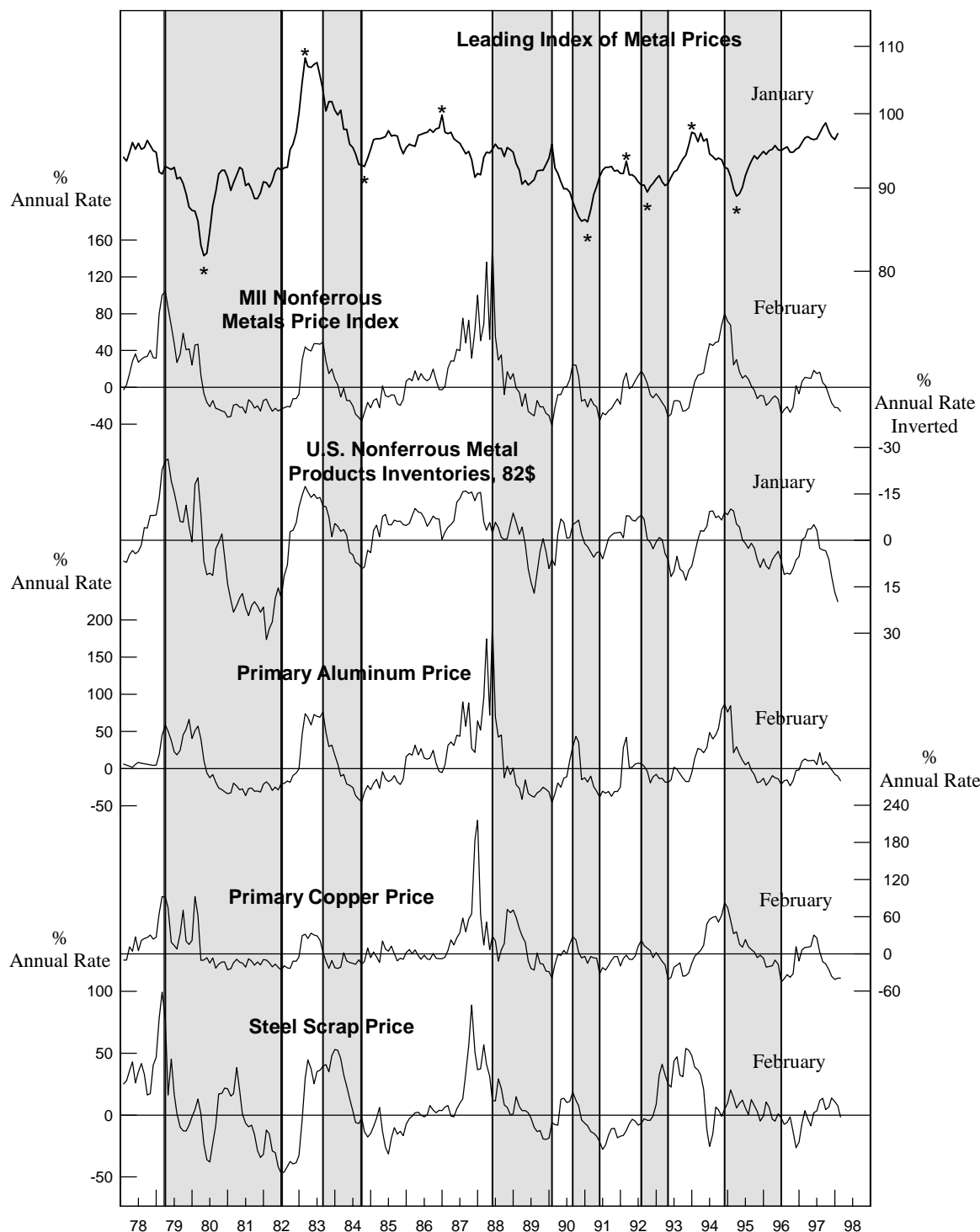
*r: Revised*

**Note:** The components of the Leading Index of Metal Prices are the 6-month smoothed growth rates of the following: 1, the deflated value of new orders for nonferrous metals; 2, the OECD leading index, total; 3, the index of new private housing units authorized; and 4, the deflated value of U.S. M2 money supply. The Metal Industry Indicators (MII) Nonferrous Metals Price Index measures changes in end-of-the-month prices for primary aluminum, copper, lead, and zinc traded on the London Metal Exchange (LME). The steel scrap price used is the price of No. 1 heavy melting. Inventories consist of the deflated value of finished goods, work in progress, and raw materials for U.S.-produced nonferrous metals and nonferrous metal products. Six-month smoothed growth rates are based on the ratio of the current month's index or price to its average over the preceding 12 months, expressed at a compound annual rate.

**Sources:** U.S. Geological Survey (USGS); American Metal Market (AMM); the London Metal Exchange (LME); the Bureau of the Census; and the Organization for Economic Cooperation and Development (OECD).

**CHART 1.  
LEADING INDEX OF METAL PRICES AND GROWTH RATES  
OF NONFERROUS METALS PRICE INDEX, INVENTORIES OF  
NONFERROUS METAL PRODUCTS, AND SELECTED PRICES**

1967 = 100



Shaded areas are downturns in the nonferrous metals price index growth rate. Asterisks (\*) are peaks and troughs in the economic activity reflected by the leading index of metal prices. Scale for nonferrous metal products inventories is inverted.

**Table 2.**  
**The Primary Metals Industry Indexes and Growth Rates**

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
<b>1997</b>				
March	123.4r	4.7r	110.0	3.1
April	124.1	5.3	110.7	3.9
May	125.1r	6.3r	110.5	2.9
June	125.6r	6.4r	111.0	3.3
July	126.4r	6.9r	111.2	3.0
August	127.5r	7.6r	111.8	3.5
September	127.4r	6.5r	112.2	3.6
October	127.6r	5.8r	112.8	4.3
November	127.1r	4.0r	113.3	4.5r
December	126.9	2.8r	113.4r	4.0r
<b>1998</b>				
January	126.7r	1.8r	114.0	4.4
February	127.0	1.6	NA	NA

*r: Revised*

**Note:** Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

**Table 3.**  
**The Contribution of Each Primary Metals Index Component to the Percent Change in the Index from the Previous Month**

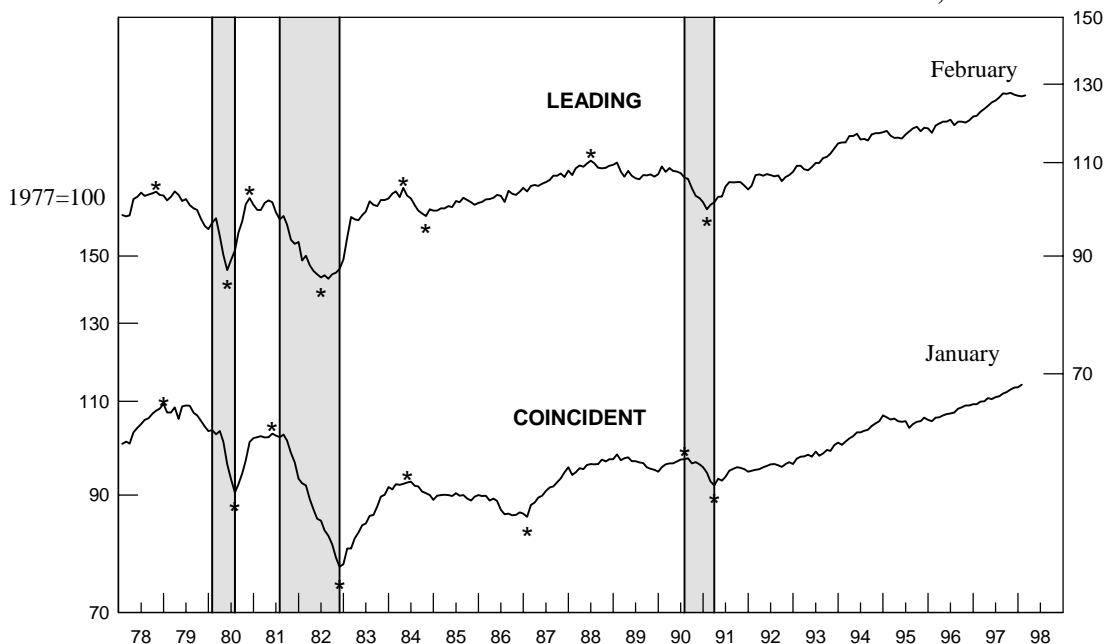
Leading Index		January	February
1. Average weekly hours, primary metals (SIC 33)		0.0	-0.8
2. S&P stock price index, machinery, diversified		-0.2r	0.8
3. Ratio of price to unit labor cost (SIC 33)		-0.1	NA
4. JOC metals price index growth rate		-0.1r	-0.1
5. New orders, primary metals, (SIC 33) 1982\$		-0.1	NA
6. Index of new private housing units authorized by permit		0.1	NA
7. Growth rate of U.S. M2 money supply, 1992\$		0.2	NA
8. Purchasing Managers' Index		-0.1r	0.2
Trend adjustment		0.0	0.0
Percent change (except for rounding differences)		-0.3r	0.1
Coincident Index		December	January
1. Industrial production index, primary metals (SIC 33)		-0.1r	0.1
2. Total employee hours, primary metals (SIC 33)		0.0	0.2
3. Value of shipments, primary metals, (SIC 33) 1982\$		0.1	0.2
Trend adjustment		0.1	0.1
Percent change (except for rounding differences)		0.1r	0.6

**Sources:** Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's; 3, Center for International Business Cycle Research, Bureau of Labor Statistics, and Federal Reserve Board; 4, Journal of Commerce; 5, Bureau of the Census and U.S. Geological Survey; 6, Bureau of the Census and U.S. Geological Survey; 7, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 8, National Association of Purchasing Management. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics and U.S. Geological Survey; 3, Bureau of the Census and U.S. Geological Survey. All series are seasonally adjusted, except 2, 3, and 4 of the leading index.

*NA: Not available      r: Revised*

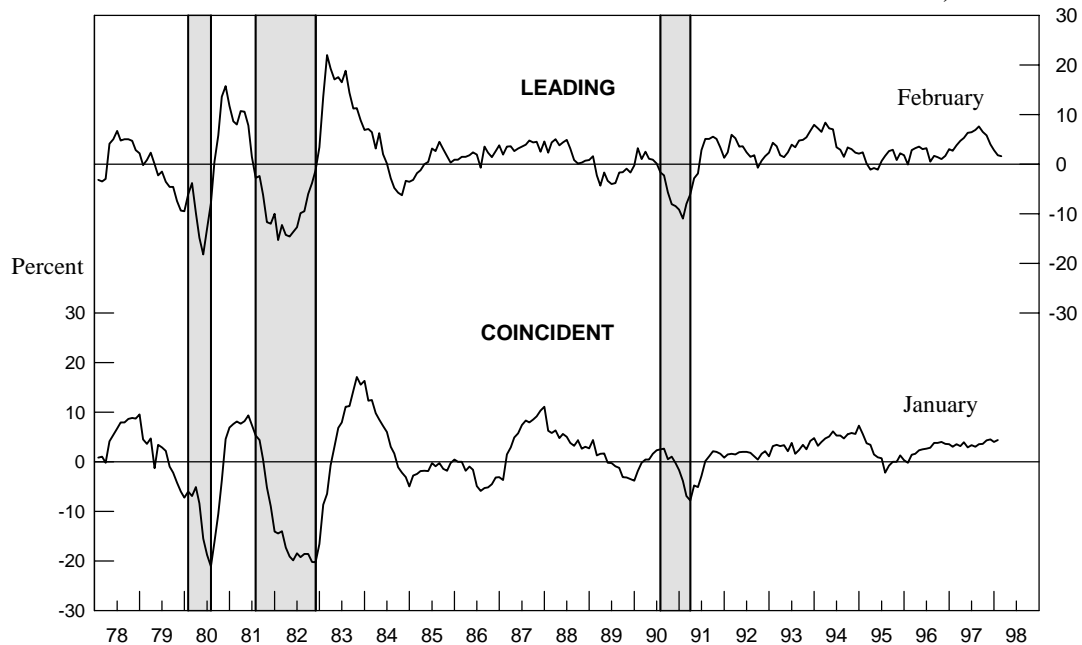
**Note:** A component's contribution, shown in Tables 3, 5, 7, and 9, measures its effect, in percentage points, on the percent change in the index. Each month, the sum of the contributions plus the trend adjustment equals (except for rounding differences) the index's percent change from the previous month.

**CHART 2.**  
**PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1978-98** 1977=100



Shaded areas are business cycle recessions. Asterisks (\*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

**CHART 3.**  
**PRIMARY METALS: LEADING AND COINCIDENT GROWTH RATES, 1978-98** Percent



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

**Table 4.**  
**The Steel Industry Indexes and Growth Rates**

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
<b>1997</b>				
February	103.5	1.9r	99.0	1.3
March	104.0	2.7r	99.2	1.4
April	103.8	2.1r	99.7	2.1
May	103.9r	2.3r	99.4	1.2
June	104.7r	3.5r	99.6	1.4
July	104.3r	2.7r	99.5	1.0
August	106.1r	5.6	99.8	1.4
September	106.9r	6.3r	100.5	2.4
October	107.0r	5.7r	100.7	2.6r
November	107.1r	5.1r	100.7r	2.3r
December	107.1r	4.2	101.0r	2.5r
<b>1998</b>				
January	106.8	3.0	101.6	3.1

*r: Revised*

**Note:** Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

**Table 5.**  
**The Contribution of Each Steel Index Component to the Percent Change in the Index from the Previous Month**

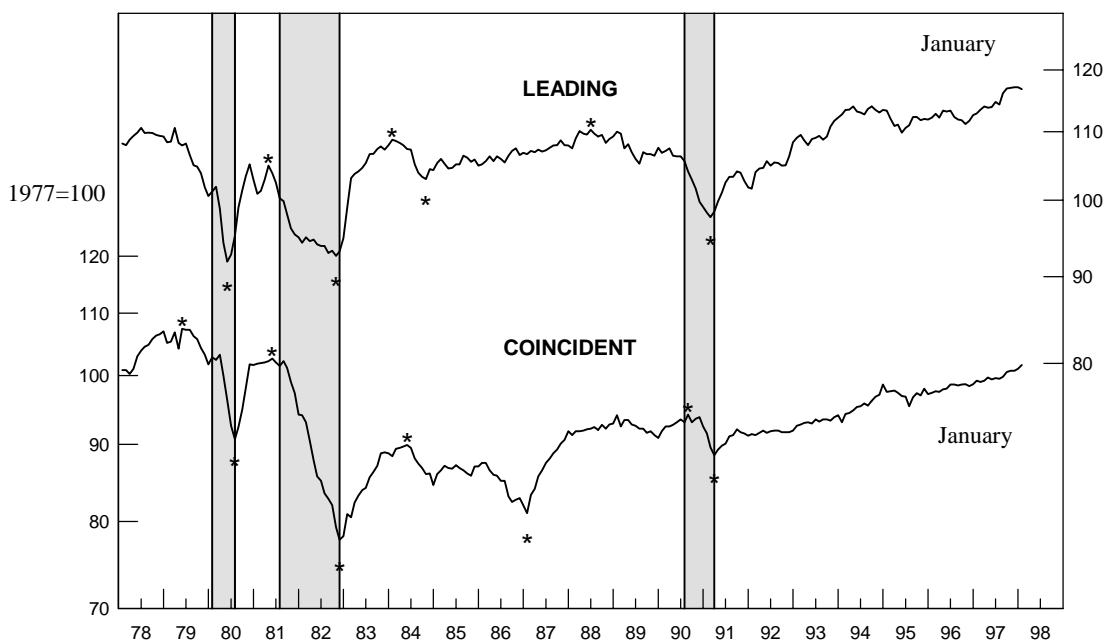
<b>Leading Index</b>	<b>December</b>	<b>January</b>
1. Average weekly hours, blast furnaces and basic steel products (SIC 331)	0.1r	0.4
2. New orders, steel works, blast furnaces, and rolling and finishing mills, 1982\$, (SIC 331)	0.0	-0.4
3. Shipments of household appliances, 1982\$	0.4	-0.3
4. S&P stock price index, steel companies	-0.4	0.0
5. Industrial production index for automotive products	-0.3r	-0.1
6. Growth rate of the price of steel scrap (#1 heavy melting, \$/ton)	0.0	-0.1
7. Index of new private housing units authorized by permit	0.1	0.1
8. Growth rate of U.S. M2 money supply, 1992\$	0.2	0.2
9. Purchasing Managers' Index	-0.1	-0.1
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.0r	-0.3
<b>Coincident Index</b>		
1. Industrial production index, basic steel and mill products (SIC 331)	-0.2r	0.0
2. Value of shipments, steel works, blast furnaces, and rolling and finishing mills (SIC 331), 1982\$	0.3	-0.1
3. Total employee hours, blast furnaces and basic steel products (SIC 331)	0.1r	0.5
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.3r	0.5

**Sources:** Leading: 1, Bureau of Labor Statistics; 2, Bureau of the Census and U.S. Geological Survey; 3, Bureau of the Census and U.S. Geological Survey; 4, Standard & Poor's; 5, Federal Reserve Board; 6, Journal of Commerce and U.S. Geological Survey; 7, Bureau of the Census and U.S. Geological Survey; 8, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 9, National Association of Purchasing Management. Coincident: 1, Federal Reserve Board; 2, Bureau of the Census and U.S. Geological Survey; 3, Bureau of Labor Statistics and U.S. Geological Survey. All series are seasonally adjusted, except 4 and 6 of the leading index.

*NA: Not available      r: Revised*

**CHART 4.**  
**STEEL: LEADING AND COINCIDENT INDEXES, 1978-98**

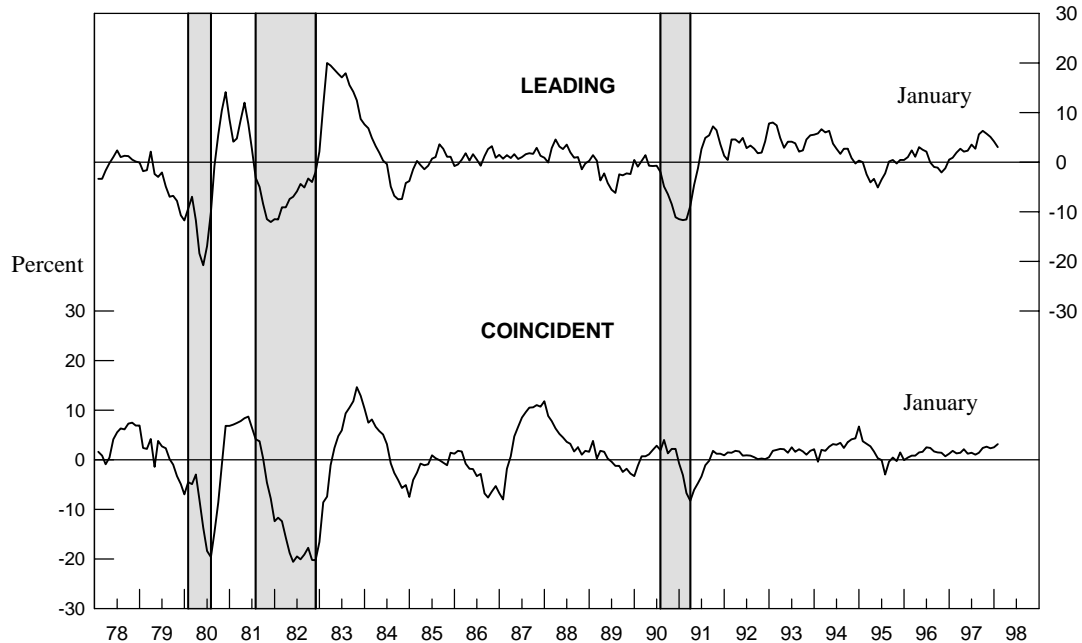
1977=100



Shaded areas are business cycle recessions. Asterisks (\*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

**CHART 5.**  
**STEEL: LEADING AND COINCIDENT GROWTH RATES, 1978-98**

Percent



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

**Table 6.**  
**The Aluminum Mill Products Industry Indexes and Growth Rates**

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
<b>1997</b>				
February	142.8	5.3r	125.7	3.5
March	142.8	4.5r	126.1	3.5
April	143.5	4.8r	125.9	2.9
May	143.7r	4.5r	125.7	2.2
June	143.7r	3.9r	127.1	3.9
July	143.9r	3.8r	127.6	4.0
August	144.6r	4.1r	126.8	2.2
September	146.8r	6.4r	127.4r	2.8r
October	148.2r	7.5r	127.6	2.7
November	145.9r	3.2r	127.9r	2.7r
December	147.1r	4.1r	127.6r	1.9r
<b>1998</b>				
January	148.7	5.5	129.1	3.7

*r: Revised*

**Note:** Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

**Table 7.**  
**The Contribution of Each Aluminum Mill Products Index Component to the Percent Change in the Index from the Previous Month**

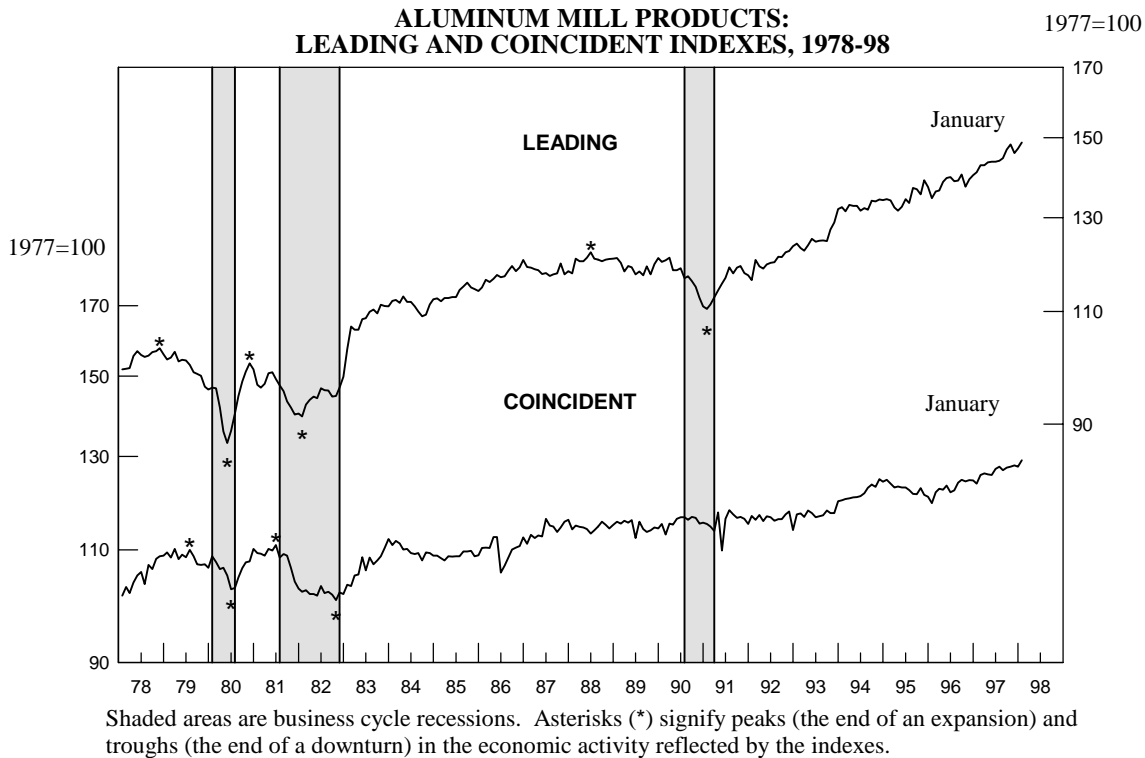
<b>Leading Index</b>	<b>December</b>	<b>January</b>
1. Average weekly hours, aluminum sheet, plate, and foil (SIC 3353)	-0.3	0.9
2. Index of new private housing units authorized by permit	0.2	0.2
3. Industrial production index for automotive products	-0.3	-0.1
4. Construction contracts, commercial and industrial (square feet)	0.7	0.1
5. Net new orders for aluminum mill products (pounds)	0.5	-0.3
6. Growth rate of U.S. M2 money supply, 1992\$	0.2	0.2
7. Purchasing Managers' Index	-0.2	-0.1
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.9	1.0
<b>Coincident Index</b>		
1. Industrial production index, aluminum sheet, plate, and foil (SIC 3353)	-0.2r	0.2
2. Total employee hours, aluminum sheet, plate, and foil (SIC 3353)	-0.4	1.2
3. Shipments of aluminum mill products (pounds)	0.4	-0.3
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.1r	1.2

**Sources:** Leading: 1, Bureau of Labor Statistics; 2, Bureau of the Census and U.S. Geological Survey; 3, Federal Reserve Board; 4, F.W. Dodge, Division of McGraw-Hill Information Systems Company; 5, The Aluminum Association, Inc. and U.S. Geological Survey; 6, Federal Reserve Board, Conference Board, and U.S. Geological Survey; 7, National Association of Purchasing Management. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics and U.S. Geological Survey; 3, Bureau of the Census and U.S. Geological Survey. All series are seasonally adjusted.

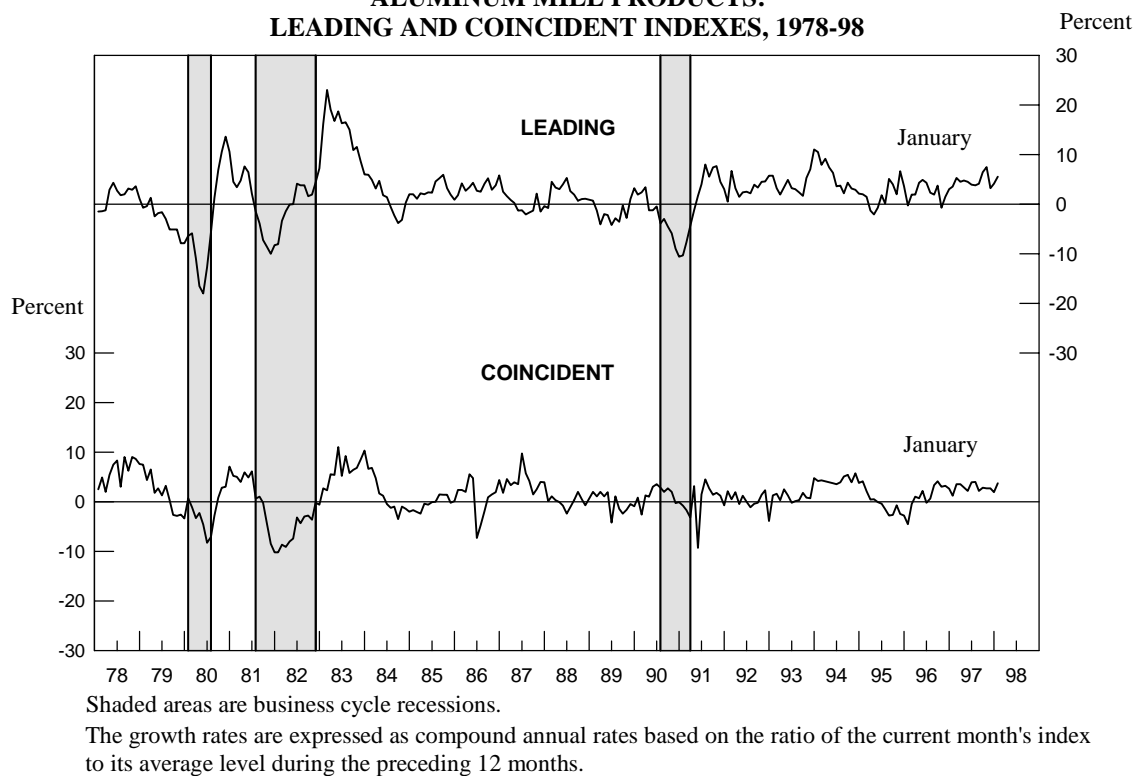
*NA: Not Available      r: Revised*



**CHART 6.**  
**ALUMINUM MILL PRODUCTS:**  
**LEADING AND COINCIDENT INDEXES, 1978-98**



**CHART 7.**  
**ALUMINUM MILL PRODUCTS:**  
**LEADING AND COINCIDENT INDEXES, 1978-98**



**Table 8.**  
**The Copper Industry Indexes and Growth Rates**

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
<b>1997</b>				
February	122.0	4.2	114.4	1.1
March	123.5	6.1	114.2	0.6
April	121.8	2.7	114.6	1.0
May	122.7	3.9	113.6	-0.9
June	122.8	3.7	114.2	0.1
July	121.7	1.4	114.0	-0.4
August	122.3	1.9	114.8	1.0
September	123.4	3.2	115.5	2.0
October	121.7	0.0	116.4r	3.2r
November	120.2	-2.6	115.8r	2.0r
December	119.2r	-4.0r	115.9r	2.0r
<b>1998</b>				
January	119.0	-4.2	117.5	4.4

*r: Revised*

**Note:** Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

**Table 9.**  
**The Contribution of Each Copper Index Component to the Percent Change in the Index from the Previous Month**

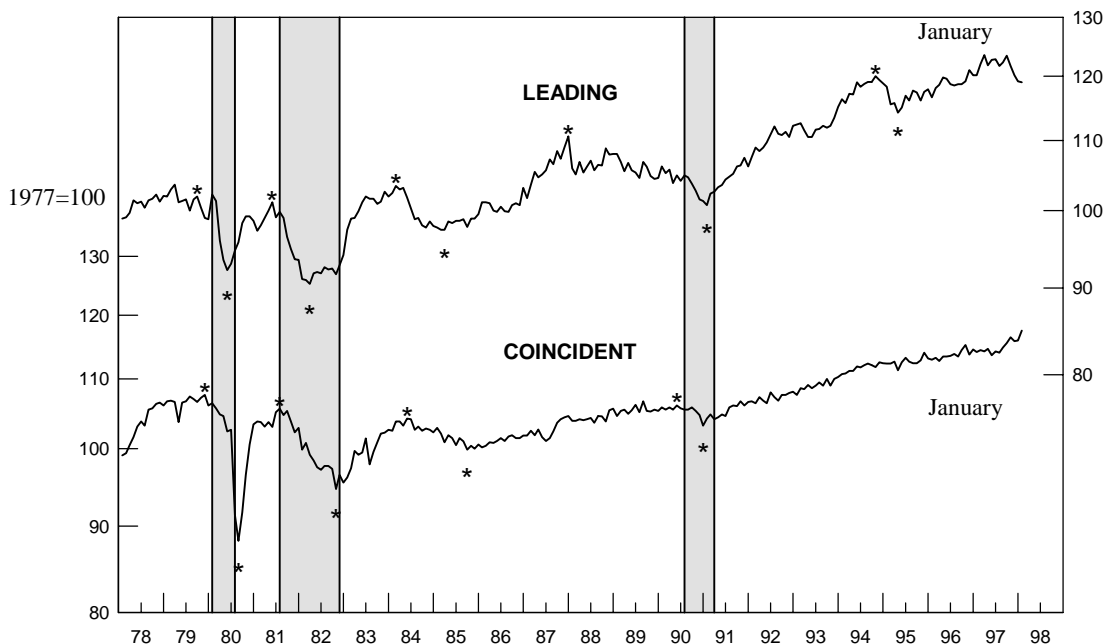
Leading Index	December	January
1. Average weekly overtime hours, rolling, drawing, and extruding of copper (SIC 3351)	0.1	0.1
2. New orders, nonferrous and other primary metals, 1982\$	-0.2r	0.5
3. MII stock price index, copper companies	-0.9	-0.4
4. Ratio of shipments to inventories, electronic and other electrical equipment (SIC 36)	0.2r	-0.6
5. Growth rate of the LME spot price of primary copper	-0.1	0.1
6. Index of new private housing units authorized by permit	0.2	0.2
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-0.7	-0.1
<b>Coincident Index</b>		
1. Industrial production index, primary smelting and refining of copper (SIC 3331)	-0.1	-0.1
2. Total employee hours, rolling, drawing, and extruding of copper (SIC 3351)	0.3	0.8
3. Copper refiners' shipments (short tons)	-0.1	0.5
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.2	1.3

**Sources:** Leading: 1, Bureau of Labor Statistics; 2, Bureau of the Census and U.S. Geological Survey; 3, U.S. Geological Survey; 4, Bureau of the Census and U.S. Geological Survey; 5, London Metal Exchange and U.S. Geological Survey; 6, Bureau of the Census and U.S. Geological Survey. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics; 3, American Bureau of Metal Statistics, Inc. and U.S. Geological Survey. All series are seasonally adjusted, except 3 and 5 of the leading index.

*NA: Not available      r: Revised*

**CHART 8.**  
**COPPER: LEADING AND COINCIDENT INDEXES, 1978-98**

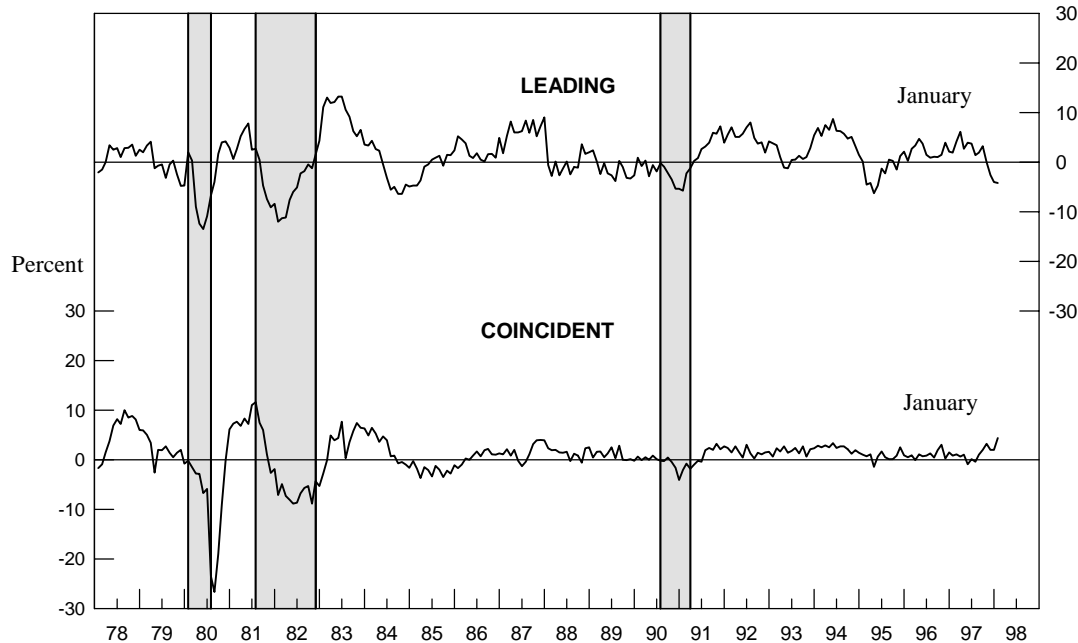
1977=100



Shaded areas are business cycle recessions. Asterisks (\*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

**CHART 9.**  
**COPPER: LEADING AND COINCIDENT GROWTH RATES, 1978-98**

Percent



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

## Explanation

Each month, the U.S. Geological Survey tracks the effects of the business cycle on five U.S. metal industries by calculating and publishing composite indexes of leading and coincident indicators. Wesley Mitchell and Arthur Burns originated the cyclical-indicators approach for the economy as a whole at the National Bureau of Economic Research in the mid-1930's. Over subsequent decades this approach was developed and refined, mostly at the National Bureau, under the leadership of Geoffrey H. Moore.<sup>1</sup>

A business cycle can briefly be described as growth in the level of economic activity followed by a decline succeeded by further growth. These alternating periods of growth and decline do not occur at regular intervals. Composite indexes, however, can help determine when highs and lows in the cycle might occur. A composite index combines cyclical indicators of diverse economic activity into one index, giving decision makers and economists a single measure of how changes in the business cycle are affecting economic activity.

The indicators in the metal industry leading indexes historically give signals several months in advance of major changes in a coincident index, a measure of current metal industry activity. Indicators that make up the leading indexes are, for the most part, measures of anticipations or new commitments to various economic activities that can affect the metal industries in the months ahead.

Composite coincident indexes for the metal industries consist of indicators for production, shipments, and total employee hours worked. As such, the coincident indexes can be regarded as measures of the economic health of the metal industries.

Three of the metal industry coincident indexes, those for primary metals, steel, and aluminum mill products, reflect their classifications in the U.S. Standard Industrial Classification (SIC). The SIC is the main classification used by the United States government and industry in collecting and tabulating economic statistics. Two of the coincident indexes, one for copper and one for primary and secondary aluminum, are blends of two different copper and aluminum industries, respectively.

Of the five metal industries, primary metals is the broadest, consisting of twenty-six different metal processing industries. The steel, aluminum, and copper industries are parts of the primary metals industry.

The metal industry leading indexes turn before their respective coincident indexes an average of 9 months for primary metals, 8 months for steel, and 7 months for copper. The average lead

time for the leading indexes of aluminum mill products and primary and secondary aluminum is 6 months.

The leading index of metal prices, also published in the Metal Industry Indicators, is designed to signal changes in a composite index of prices for primary aluminum, copper, lead, and zinc traded on the London Metal Exchange. On average, this leading index indicates significant changes in price growth about 7 months in advance.

The growth rate used in the Metal Industry Indicators is a 6-month smoothed growth rate at a compound annual rate, calculated from a moving average. Moving averages smooth fluctuations in data over time so that trends can be observed. The 6-month smoothed growth rate is based upon the ratio of the latest monthly value to the preceding 12-month moving average.

$$\left[ \left( \frac{\text{current value}}{\text{preceding 12-month moving average}} \right)^{\frac{12}{6.5}} - 1.0 \right] * 100$$

Because the interval between midpoints of the current month and the preceding 12 months is 6.5 months, the ratio is raised to the 12/6.5 power to derive a compound annual rate.

The growth rates measure the near-term industry trends. They, along with other information about the metal industries and the world economy, are the main tools used to determine the outlook of the industries. A 6-month smoothed growth rate above +1.0% usually means increasing growth; a rate below -1.0% usually means declining growth.

**The next summary is scheduled for release on MINES FaxBack at 10:00 a.m. EDT, Friday, April 17. Access MINES FaxBack from a touch-tone telephone attached to a fax machine by dialing 703-648-4999. The address for Metal Industry Indicators on the World Wide Web is: <http://minerals.er.usgs.gov/minerals/pubs/mii/>**

The **Metal Industry Indicators** is produced at the U.S. Geological Survey by the Minerals Information Team. The report is prepared by Kenneth Beckman (703-648-4916), e-mail ([kbeckman@usgs.gov](mailto:kbeckman@usgs.gov)), and Gail James (703-648-4915), e-mail ([gjames@usgs.gov](mailto:gjames@usgs.gov)). The Center for International Business Cycle Research, under the direction of Dr. Geoffrey H. Moore, and the former U.S. Bureau of Mines developed the metal industry leading and coincident indexes in the early 1990's. Customers can send mail concerning the Metal Industry Indicators to the following address:

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<sup>1</sup>**Business Cycle Indicators, A monthly report from The Conference Board** (March 1996).